

C. Remarks

The claims are 1 and 11-13, with claim 1 being the sole independent claim. Claims 4-6 have been cancelled without prejudice or disclaimer. Claim 1 has been amended to clarify the invention. New claims 11-13 have been added. Support for the amendments can be found throughout the application as filed, e.g., at paragraphs [0124] and [0127] and at Figures 2, 4, and 5B (reference numerals 8, 54, 55, 213, 214, 216, and 217). Applicants respectfully submit that no new matter has been added. Reconsideration of the present claims is respectfully requested.

In the final Office Action dated December 6, 2010, claims 1, 4 and 5 were rejected under 35 U.S.C. §103(a) as being allegedly obvious over Watanabe (U.S. Patent No. 5689289) in view of Iwasaki (U.S. Patent No. 6328403), Clark (U.S. Patent No. 7265856) and Deschuytere (U.S. Patent No. 5758042). In addition, claim 6 was rejected on the same grounds and further in view of Iwasaki ‘961 (U.S. Patent Application Publication No. 2002/0175961). Applicants would like to address those rejections as they relate to presently pending claims 1 and 11-13.

The present invention is directed to a printing apparatus that prints by scanning a print head, which has a first nozzle array for ink of a first color and a second nozzle array for ink of a second color different from the first color, with regard to a printing medium. The apparatus comprises a print buffer, input means, acquisition means, and storage control means. The print buffer divides storage area into a plurality of first regions in corresponding with the scan direction of the print head, each first region being divided into a plurality of second regions in correspondence with color component. The input means sequentially inputs a plurality of block data, wherein the block data contains first color component data corresponding to the first color and/or second color component

data corresponding to the second color and a code representing the end of the first color component data and the second color component data, respectively, and wherein each color component data has compressed data. The acquisition means reads block data from the input means, acquires data from the block data by decompressing the compressed data in each color component, and determines the code. The storage control means assigns block data to the first region of the print buffer and stores the data acquired by the acquisition means in second regions of the first region on the basis of the code determined by said acquisition means.

Watanabe describes, with respect to Fig.3 and at col. 4, lines 15-18, that 205, 206 are printer buffers for storing data output from the horizontal-to-vertical converter circuit 204, having a data storage capacity corresponding to the area to be recorded by a single main scan of the recording head. At col.5, lines 46-51, Watanabe discloses that the print buffers 1(205), 2(206) are both memories having a storage capacity (64 X 3640 bits) corresponding to a data amount recorded by a single scan of the recording head 21, one of them being used for the reading (recording) while the other is used for the storage of data for the scan.

In Iwasaki, it is described in Fig.11 and at col. 7, line 62, to col. 8, line 23, that the analyzed print data of the individual colors are developed by the print data developing means 617 and the developed data are stored in the print buffers 618Y, 618M, 618C, and 618K of the corresponding colors under the control of the developing band managing means 11004 to 11007. Each of these print buffers 618Y, 618M, 618C and 618K is configured in units of storage areas for eight rasters. It is also described in Fig.14 and at col. 9, lines 58-60, that a RAM has the print buffers 618 for storing print data of the corresponding colors.

Clark describes, with regard to Fig.2, step 210, and at col. 4 lines 18-26, that all the data for each color will be transmitted in a different data stream and the host software 150 divides the print data into a separate data stream for each of cyan, yellow, and magenta. Further, it is described in Fig.3 and at col. 5, lines 15-21, that the ordering of segments for three data streams, a cyan data stream 310, a magenta data stream 320, and yellow data stream 330, is performed. It is also described in Fig.7 and at col. 6, line 56, through col. 7, line 2, that data stream 730 contains data 712, 713 and that segment 711 contains zeros for empty interval 714. Data 712 and data 713 are for the same color data.

In Clark, data stream is formed for each color (310, 320, 330). On the contrary, input means in the present invention inputs block data sequentially. Each block data includes data for a plurality of colors (Fig.5B 213,214) and code (216) representing the end of the first color component data and code (217) representing the end of the second color component data. In this way, the present invention is entirely different from Clark in the point of data stream and code. (Likewise the present invention is entirely different from previously cited Casey in which a single data stream does not include data for a plurality of colors.)

In addition, the storage control means of the present invention assigns block data to the first region of the print buffer which is divided in accordance with the scanning direction of the print head. Additionally, the storage control means stores column data in second regions on the basis of the code determined by the acquisition means. On the contrary, Watanabe and Iwasaki fail to disclose the storage control on the basis of code.

Deschuytere and Iwasaki '961 do not remedy the deficiencies noted above with regard to Clark, Watanabe and Iwasaki, as they are cited by the Examiner for other

disclosure. For at least the reasons noted above, therefore, Applicants submit that the present claims are not obvious over the previously cited combination of references.

In view of the foregoing amendment and remarks, favorable reconsideration and passage to issue is earnestly requested. Should the Examiner believe that issues remain outstanding, the Examiner is respectfully requested to contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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